

inwardly by the restraining device when the gripping plate moved from the open position to the closed position, the restraining device being further configured to permit the gripping plate to be movable relative to the pickup head in at least one degree of freedom when the gripping plate is being moved from the closed position to the open position; and

an actuation device configured to move the at least one gripping plate between the open position and the closed position;

wherein the restraining device includes a camming surface and the gripping plate includes a follower configured to be displaceable in accordance with the camming surface between the open position and the closed position of the corresponding gripping plate.

REMARKS

I. Introduction

Claims 1 to 24 are currently pending in this application. Claims 11 and 23 have been withdrawn from consideration. Claims 1 to 10, 12 to 22 and 24 are rejected. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicants note with appreciation the acknowledgment of the claim for domestic priority under 35 U.S.C. § 119(e).

Applicants thank the Examiner for considering the previously filed Information Disclosure Statement, PTO-1449 paper and cited references.

II. Objection to the Drawings

The drawings were objected to under 37 C.F.R. § 1.83(a). The Office Action alleges that the drawings do not show every feature of the invention specified in the claims, specifically the "at least one degree of freedom" feature. Applicants respectfully disagree. The "at least one degree of freedom" relates to the direction and plane in which the gripping plate is free to move. Applicants submit that by illustrating the gripping plate in both the open and closed positions, Figures 1 and 2 clearly show that the gripping plate is movable relative to the pickup head in at least one degree of freedom, as recited in claim 1. The gripping plate takes advantage of its at least one degree of freedom to move between the open position, illustrated in

Figure 1, and the closed position, illustrated in Figure 2. Accordingly, withdrawal of the objection to the drawings is respectfully requested.

III. Objection to the Specification

The Office Action objected to the Specification and requested that updated patent information be provided in the Cross-Reference to Related Applications section. Applicants have amended this section as suggested. No new matter has been added. Therefore, withdrawal of the objection to the Specification is respectfully requested.

IV. Objection to Claims 8 and 20

The Office Action objected to claims 8 and 20 under 37 C.F.R. 1.75(c) as allegedly being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants respectfully traverse this objection.

Applicants submit that claim 8 further limits claim 7 and claim 20 further limits claim 19 by reciting that the second end of the first link is rotatably connected to a first end of the corresponding gripping plate. Claims 7 and 19 recite that the second end is rotatably connected to the corresponding gripping plate but they do not specifically state that the second end is rotatably connected to a first end of the corresponding gripping plate, as recited in claims 8 and 20. Accordingly, claim 8 further limits claim 7, and claim 20 further limits claim 19. Therefore, withdrawal of this objection is respectfully requested.

V. Rejection of Claims 1 to 10, 12 to 22 and 24 Under 35 U.S.C. § 112

Claims 1 to 10, 12 to 22 and 24 were rejected under 35 U.S.C. § 112, second paragraph as indefinite for allegedly failing to particularly point out and distinctly claim the subject matter of the invention.

The Office Action alleges that the phrase "at least one degree of freedom at least when the gripping plate is in the open position and in the closed position", as recited in claim 1, and the phrase "at least one degree of freedom at least when the gripping plate is being moved from the closed position to the open position", as recited in claim 13, are not clearly understood. Applicants submit that the language as written is clear. Applicants submit that if the gripping plate was not movable relative to the pickup in at least one degree of freedom when in the open

position then the gripping plate would not be able to move to the closed position, and vice versa. Accordingly, the recitation that gripping plate is movable in at least one degree of freedom at least when in the open and closed positions is consistent with the fact that the gripping plate has to be able to move to get out of and into these positions.

Notwithstanding the above, for the purpose of expediting prosecution, independent claims 1 and 13 have been amended herein without prejudice to remove the "at least when" recitation. Accordingly, withdrawal of the 35 U.S.C. § 112 rejection and allowance of claims 1 to 10, 12 to 22 and 24 is respectfully requested.

VI. Rejection of Claims 1 to 4, 7, 8, 12, 13, 16 to 20 and 24 Under 35 U.S.C. § 102(b)

Claims 1 to 4, 7, 8, 12, 13, 16 to 20 and 24 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,163,727 ("Slezak et al."). Applicants respectfully submit that Slezak et al. do not anticipate claims 1 to 4, 7, 8, 12, 13, 16 to 20 and 24, as amended, for the following reasons.

Claim 1 relates to an apparatus for gripping and releasing at least one item. Claim 1 recites that the apparatus includes a pickup head, at least one gripping plate, a restraining device corresponding to each gripping plate and an actuation device configured to move the at least one gripping plate between the open position and the closed position. Claim 1 further recites that the restraining device is configured to connect the corresponding gripping plate to the pickup head so that the gripping plate is movable relative to the pickup head between an open position and a closed position and so that the gripping plate is movable relative to the pickup head in at least one degree of freedom when the gripping plate is in the open position and in the closed position. Claim 1 has been amended to recite that the restraining device includes at least a first link and a second link and that the first link and second link are connected to the pickup head and to the gripping plate.

Claim 13 relates to an apparatus for gripping and releasing at least one item. Claim 13 recites that the apparatus includes a pickup head, at least one gripping plate, a restraining device corresponding to each gripping plate and an actuation device configured to move the at least one gripping plate between the open position and the closed position. Claim 13 further recites that the restraining

device is configured to connect the corresponding gripping plate to the pickup head so that the gripping plate is movable relative to the pickup head between an open position and a closed position. Claim 13 further recites that an end of the gripping plate is displaced inwardly by the restraining device when the gripping plate is moved from the open position to the closed position. Claim 13 further recites that the restraining device is further configured to permit the gripping plate to be movable relative to the pickup head in at least one degree of freedom when the gripping plate is being moved from the closed position to the open position. Claim 13 has been amended to recite that the restraining device comprises at least a first link and a second link and that the first link and second link are connected to the pickup head and to the gripping plate.

Slezak et al. purportedly relate to a loading chuck. Slezak et al. state that the loading chuck includes shoe assemblies 260, arm assemblies 250 and parallelogram linkages 226, 228 and 229. See col. 15, lines 1 to 27. As shown in Figure 11, only linkages 229 are connected to arm assemblies 250 and to pickup head 330. Linkages 226 and 228 are pivotally connected to each other at joint 230. See col. 15, lines 21 to 28.

The Office Action alleges that elements 226, 250 and 260 are gripping plates. Applicants respectfully disagree. Element 226 is identified by Slezak et al. as a parallelogram linkage not a gripping plate. See col. 15, line 10. The Office Action further alleges that Slezak et al. disclose a restraining device 229. Nowhere, however, does the Office Action allege disclosure of or does Slezak et al. disclose, or even suggest, a restraining device including at least a first link and a second link, said first link **and** second link connected to the pickup head and to the gripping plate, as recite in amended claims 1 and 13. Therefore, Slezak et al. do not disclose, or even suggest, all of the limitations of claims 1 and 13.

To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of Calif.*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the . . . claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). As more fully set forth above, it is respectfully

submitted that Slezak et al. do not disclose, or even suggest, a restraining device including at least a first link and a second link, said first link **and** second link connected to the pickup head and to the gripping plate, as recite in amended claims 1 and 13. Accordingly, Slezak et al. do not anticipate claims 1 and 13.

Additionally, to reject a claim under 35 U.S.C. § 102, the Examiner must demonstrate that each and every claim limitation is contained in a single prior art reference. *See, Scripps Clinic & Research Foundation v. Genentech, Inc.*, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991). Still further, not only must each of the claim limitations be identically disclosed, an anticipatory reference must also enable a person having ordinary skill in the art to practice the claimed invention, namely the inventions of the rejected claims, as discussed above. *See, Akzo, N.V. v. U.S.I.T.C.*, 1 U.S.P.Q.2d 1241, 1245 (Fed. Cir. 1986). In particular, it is respectfully submitted that, at least for the reasons discussed above, the reference relied upon would not enable a person having ordinary skill in the art to practice the inventions of the rejected claims, as discussed above. Also, to the extent that the Examiner is relying on the doctrine of inherency, the Examiner must provide a "basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flows from the teachings of the applied art." *See* M.P.E.P. § 2112; emphasis in original; and *see, Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). Thus, the M.P.E.P. and the case law make clear that simply because a certain result or characteristic may occur in the prior art does not establish the inherency of that result or characteristic. Accordingly, the anticipation rejection as to the rejected claims must necessarily fail for the foregoing reasons.

As for claims 2 to 4, 7, 8 and 12, which ultimately depend on amended claim 1 and therefore include all of the limitations of amended claim 1, Applicants respectfully submit that these claims are patentable for at least the same reasons provided above in support of the patentability of amended claim 1.

As for claims 13, 16 to 20 and 24, which ultimately depend on claim amended 13 and therefore include all of the limitations of amended claim 13, Applicants respectfully submit that these claims are patentable for at least the same reasons provided above in support of the patentability of amended claim 13.

VII. Rejection of Claims 1, 4, 7, 8, 12, 13, 18 to 20 and 24 Under 35 U.S.C. § 102(b)

Claims 1, 4, 7, 8, 12, 13, 18 to 20 and 24 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,417,464 ("Seaberg et al."). Applicants respectfully submit that Seaberg et al. do not anticipate claims 1, 4, 7, 8, 12, 13, 18 to 20 and 24, as amended, for the following reasons.

Seaberg et al. purportedly relate to a slip-correcting load-clamping system. A load is stated to be gripped between a pair of load-engaging surfaces while the magnitude of any slippage between the load and the surfaces is variably sensed. Abstract. Clamp arms 20 and 22 are stated to be connected between load-engaging surfaces 14 and 16 and clamp rotator 18. See col. 4, line 53 to col. 5, line 3. As shown in Figure 2, each load-engaging surface is connected by only one clamp arm.

The Office Action alleges that Seaberg et al. disclose a restraining device 20, 22. Nowhere, however, does the Office Action allege disclosure of or does Seaberg et al. disclose, or even suggest, a restraining device including at least a first link and a second link, said first link **and** second link connected to the pickup head and to the gripping plate, as recite in amended claims 1 and 13. Therefore, Seaberg et al. do not disclose, or even suggest, all of the limitations of claims 1 and 13. Since Seaberg et al. do not disclose, or even suggest, each and every element as set forth in claims 1 and 13, it is respectfully submitted that Seaberg et al. do not anticipate claims 1 and 13.

As for claims 4, 7, 8 and 12, which ultimately depend on amended claim 1 and therefore include all of the limitations of amended claim 1, Applicants respectfully submit that these claims are patentable for at least the same reasons provided above in support of the patentability of amended claim 1.

As for claims 13, 18 to 20 and 24, which ultimately depend on claim amended 13 and therefore include all of the limitations of amended claim 13, Applicants respectfully submit that these claims are patentable for at least the same reasons provided above in support of the patentability of amended claim 13.

VIII. Rejection of Claim 2, 3, 16 and 17 Under 35 U.S.C. § 103 (a)

Claims 2, 3, 16 and 17 were rejected as unpatentable over the combination of Seaberg et al. and U.S. Patent No. 3,695,670 ("Barnett et al.").

Applicants respectfully submit that claims 2, 3, 16 and 17 are patentable over the combination of Seaberg et al. and Barnett et al. for the following reasons.

Barnett et al. purportedly relate to a device for handling tobacco. See col. 1, lines 5 to 8. Barnett et al. state that the device includes two arms pivotally mounted to ends of a cross-member, each arm having a pair of inwardly directed probes. Abstract

The Office Action alleges that Seaberg et al. show the actuation device which is a hydraulic cylinder. The Office Action admits that Seaberg et al. do not show an air cylinder. The Office Action alleges, however, that Barnett et al. show an actuation device which is a pneumatic cylinder and, thus, asserts that it would have been obvious to provide a pneumatic cylinder on the Seaberg et al. gripping apparatus as purportedly described by Burnett et al. so that the gripping plate can softly grasp an item.

As indicated above, nowhere do Seaberg et al. disclose, or even suggest, a restraining device including at least a first link and a second link, said first link **and** second link connected to the pickup head and to the gripping plate, as recite in amended claims 1 and 13. Nor do Barnett et al. cure the deficiencies of Seaberg et al. Therefore, neither Seaberg et al. nor Barnett et al. discloses, or even suggest, all of the limitations of claims 1 and 13. That is, the combination of Seaberg et al. and Barnett et al. does not disclose, or even suggest, all of the limitations of claim 1, from which claims 2 and 3 depend, or claim 13, from which claims 16 and 17 depend.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). As stated above, Seaberg et al.

fail to disclose, or even suggest, each and every feature of claims 1 and 13. Specifically, Seaberg et al. do not teach, or even suggest, a restraining device including at least a first link and a second link, said first link **and** second link being connected to the pickup head and to the gripping plate, as recite in amended claims 1 and 13. Nor do Barnett et al. cure the deficiencies of Seaberg et al. It is therefore respectfully submitted that the combination of Seaberg et al. and Barnett et al. does not render obvious claims 2 and 3, which depend from claim 1, or claims 16 and 17, which depend from claim 13.

Moreover, it is respectfully submitted that the cases of *In re Fine*, *supra*, and *In re Jones*, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Office Action's generalized assertions that it would have been obvious to modify or combine the references do not properly support a § 103 rejection. It is respectfully submitted that those cases make plain that the Office Action reflects a subjective "obvious to try" standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the reference relied upon. In particular, the Court in the case of *In re Fine* stated that:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done. . . .

Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of *In re Jones* stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to

make the modifications . . . necessary to arrive at the claimed [invention].

In re Jones, 21 U.S.P.Q.2d at 1943, 1944 (citations omitted; italics in original).

That is exactly the case here since it is believed and respectfully submitted that the present Office Action offers no evidence whatsoever, but only conclusory hindsight, reconstruction and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding. Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to modify or combine references to provide the claimed subject matter of the claims to address the problems met thereby. Accordingly, the Office must provide proper evidence of a motivation for modifying or combining the references to provide the claimed subject matter.

More recently, the Federal Circuit in the case of *In re Kotzab* has made plain that even if a claim concerns a “technologically simple concept” -- which is not the case here -- there still must be some finding as to the “specific understanding or principle within the knowledge of a skilled artisan” that would motivate a person having no knowledge of the claimed subject matter to “make the combination in the manner claimed,” stating that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab’s invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000) (emphasis added). Again, it is believed that there have been no such findings.

That the present rejection is based on nothing more than improper hindsight is plainly apparent based on the failure of the Office Action to even

consider that which would have been obvious to a person having ordinary skill in the art at the time the invention was made, the very words of 35 U.S.C. § 103(a).

Accordingly, there is no evidence that the references relied upon, whether taken alone, combined or modified, would provide the features and benefits of claims 2, 3, 16 and 17. It is therefore respectfully submitted that claims 2, 3, 16 and 17 are allowable for these reasons. Therefore, withdrawal of the 35 U.S.C. § 103(a) rejection and allowance of claims 2, 3, 16 and 17 is respectfully requested.

IX. Nonstatutory Double Patenting Rejection of Claims 1 to 3, 5 to 10, 12 to 17, 19 to 22 and 24

Claims 1 to 3, 5 to 10, 12 to 17, 19 to 22 and 24 were rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1 to 3, 7 to 10, 12, 16 to 20 and 24 to 27 of U.S. Patent No. 6,056,341. The Office Action indicates, however, that a timely filed terminal disclaimer in compliance with 37 C.F.R. § 1.321(c) may be used to overcome this rejection. Applicants are prepared to submit a terminal disclaimer in compliance with 37 C.F.R. § 1.321(c) to overcome the nonstatutory double patenting rejections of claims 1 to 3, 5 to 10, 12 to 17, 19 to 22 and 24 upon withdrawal of all other rejections and when the claims are otherwise indicated to be in final form for allowance.

X. Claims 5, 6, 9, 14, 15 and 21 to 23

Claims 5, 14, 21 and 23 have been rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 6 and 9 depend upon independent claim 5, claim 15 depends upon independent claim 14 and claim 22 depends upon independent claim 21. As indicated above, Applicants are prepared to submit a terminal disclaimer in compliance with 37 C.F.R. § 1.321(c) to obviate the nonstatutory double patenting rejections of claims 1 to 3, 5 to 10, 12 to 17, 19 to 22 and 24 upon withdrawal of the 35 U.S.C. § 112 and 35 U.S.C. § 102(b) rejections and upon an indication that the claims are in final form for allowance.

Applicants note that claims 5, 6, 9, 14, 15 and 21 to 23 were only rejected under 35 U.S.C. § 112 and nonstatutory double patenting grounds and that claims 10 and 11 were only rejected under nonstatutory double patenting grounds.

Applicants respectfully submit that claims 5, 6, 9, 14, 15 and 21 to 23, as amended, are in condition for allowance. Therefore, Applicants respectfully request that the Examiner indicate that claims 5, 6, 9, 14, 15 and 21 to 23 would be allowable upon filing of a terminal disclaimer.

XI. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

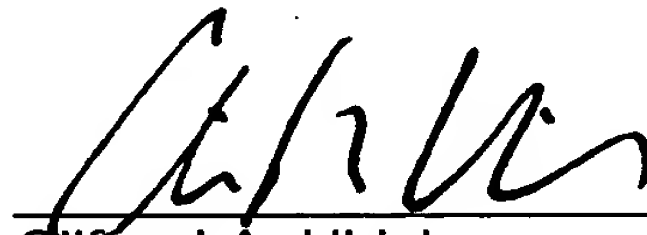
Attached hereto is a marked-up version of the changes made to the Specification and claims by the current Amendment. The attached page is captioned "**Version with Markings to Show Changes Made.**"

Respectfully submitted,

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Dated: June 20, 2003

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

On page 1, the paragraph starting on line 2 has been amended as follows:

--This is a continuation-in-part of U.S. Patent Application Serial No. 09/484,340, filed on January 18, 2000, now U.S. Patent No. 6,237,978, which is a continuation-in-part of U.S. Patent Application Serial No. 09/008,685, filed on January 16, 1998, now U.S. Patent No. 6,056,341, each of which is incorporated herein in its entirety by reference thereto.--.

IN THE CLAIMS:

Claims 1, 5, 7, 13, 14, 19, 21 and 23 have been amended, without prejudice, as follows:

1. (Amended) An apparatus for gripping and releasing at least one item, comprising:

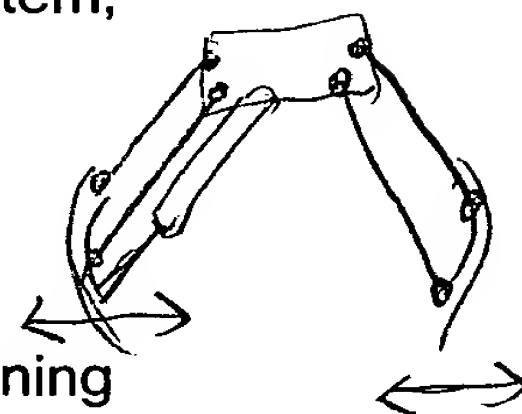
(31, 33) a pickup head;

(7, 9) at least one gripping plate;

(31, 33) (5a, 5b) a restraining device corresponding to each gripping plate, the restraining device being configured to connect the corresponding gripping plate to the pickup head so that the gripping plate is movable relative to the pickup head between an open position and a closed position and so that the gripping plate is movable relative to the pickup head in at least one degree of freedom [at least] when the gripping plate is in the open position and in the closed position; and

(25, 27) an actuation device configured to move the at least one gripping plate between the open position and the closed position;

(3a, 3b) (5a, 5b) wherein the restraining device includes at least a first link and a second link, said first link and second link connected to the pickup head and to the gripping plate.



5. (Amended) [The apparatus according to claim 1,] An apparatus for gripping and releasing at least one item, comprising:
a pickup head;

VERSION WITH MARKINGS TO SHOW CHANGES MADE

at least one gripping plate;

a restraining device corresponding to each gripping plate, the restraining device being configured to connect the corresponding gripping plate to the pickup head so that the gripping plate is movable relative to the pickup head between an open position and a closed position and so that the gripping plate is movable relative to the pickup head in at least one degree of freedom when the gripping plate is in the open position and in the closed position;

an actuation device configured to move the at least one gripping plate between the open position and the closed position; and

57 { further comprising at least one biasing element corresponding to each gripping plate, the at least one biasing element urging the corresponding gripping plate in a direction in accordance with the at least one degree of freedom.

7. (Amended) The apparatus according to claim 1,
wherein the [restraining device includes a linkage system, the linkage system including a first link having] first link has a first end rotatably connected to the pickup head and a second end rotatably connected to the corresponding gripping plate.

13. (Amended) An apparatus for gripping and releasing at least one item, comprising:

a pickup head;

at least one gripping plate;

a restraining device corresponding to each gripping plate, the restraining device being configured to connect the corresponding gripping plate to the pickup head so that the gripping plate is movable relative to the pickup head between an open position and a closed position, an end of the gripping plate being displaced inwardly by the restraining device when the gripping plate moved from the open position to the closed position, the restraining device being further configured to permit the gripping plate to be movable relative to the pickup head in at least one

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degree of freedom [at least] when the gripping plate is being moved from the closed position to the open position; and

an actuation device configured to move the at least one gripping plate between the open position and the closed position;

new { wherein the restraining device includes at least a first link and a second link, said first link and second link connected to the pickup head and to the gripping plate.

14. (Amended) [The apparatus according to claim 13,] An apparatus for gripping and releasing at least one item, comprising:

a pickup head;

at least one gripping plate;

a restraining device corresponding to each gripping plate, the restraining device being configured to connect the corresponding gripping plate to the pickup head so that the gripping plate is movable relative to the pickup head between an open position and a closed position, an end of the gripping plate being displaced inwardly by the restraining device when the gripping plate moved from the open position to the closed position, the restraining device being further configured to permit the gripping plate to be movable relative to the pickup head in at least one degree of freedom when the gripping plate is being moved from the closed position to the open position; and

an actuation device configured to move the at least one gripping plate between the open position and the closed position; and

further comprising at least one biasing element corresponding to each gripping plate, the at least one biasing element urging the corresponding gripping plate in a direction in accordance with the at least one degree of freedom.

19. (Amended) The apparatus according to claim 13,

wherein the [restraining device includes a linkage system, the linkage system including a] first link [having] has a first end rotatably connected to the pickup head and a second end rotatably connected to the corresponding gripping plate.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

21. (Amended) [The apparatus according to claim 19,] An apparatus for gripping and releasing at least one item, comprising:

a pickup head;

at least one gripping plate;

a restraining device corresponding to each gripping plate, the restraining device being configured to connect the corresponding gripping plate to the pickup head so that the gripping plate is movable relative to the pickup head between an open position and a closed position, an end of the gripping plate being displaced inwardly by the restraining device when the gripping plate moved from the open position to the closed position, the restraining device being further configured to permit the gripping plate to be movable relative to the pickup head in at least one degree of freedom when the gripping plate is being moved from the closed position to the open position; and

an actuation device configured to move the at least one gripping plate between the open position and the closed position;

wherein the restraining device includes a linkage system, the linkage system including a first link having a first end rotatably connected to the pickup head and a second end rotatably connected to the corresponding gripping plate; and

wherein the linkage system includes a second link having a first end connected to the pickup head and a second end having a slot, a portion of the corresponding gripping plate being slidably arranged relative to the slot.

23. (Amended) [The apparatus according to claim 13,] An apparatus for gripping and releasing at least one item, comprising:

a pickup head;

at least one gripping plate;

a restraining device corresponding to each gripping plate, the restraining device being configured to connect the corresponding gripping plate to the pickup head so that the gripping plate is movable relative to the pickup head between an open position and a closed position, an end of the gripping plate being displaced

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inwardly by the restraining device when the gripping plate moved from the open position to the closed position, the restraining device being further configured to permit the gripping plate to be movable relative to the pickup head in at least one degree of freedom when the gripping plate is being moved from the closed position to the open position; and

an actuation device configured to move the at least one gripping plate between the open position and the closed position;

wherein the restraining device includes a camming surface and the gripping plate includes a follower configured to be displaceable in accordance with the camming surface between the open position and the closed position of the corresponding gripping plate.